

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Rulemaking to Amend Parts 1.)
21 and 25 of the Commission's Rules) CC Docket No. 92-297
to Redesignate the 27.5 - 29.5 GHz)
Frequency Band, to Reallocate the)
27.5 - 30.0 GHz Band, to Establish Rules)
and Policies for Local Multipoint)
Distribution Services and the)
Fixed Satellite Service)
)
and)
)
Suite 12 Group Petition for Pioneer's) PP-22
Preference)

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REPLY COMMENTS OF TELEDESIC CORPORATION

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SUMMARY

Teledesic Corporation ("Teledesic") respectfully submits the following reply comments in response to the Third Notice of Proposed Rulemaking and Supplemental Tentative Decision ("Third NPRM") released by the Federal Communications Commission ("FCC" or "Commission") in the above-captioned proceeding. As Teledesic and other parties demonstrated in their comments, the FCC's proposed 27.5 - 30.0 GHz band ("28 GHz band") segmentation plan is a reasonable accommodation of the competing interests and the FCC should proceed immediately to adopt the plan as proposed.

- o Teledesic continues to support prompt action by the FCC to adopt the 28 GHz band segmentation plan. It is imperative that the band plan be adopted now to allow all affected parties to proceed without delay with their respective business plans.
 - Once the FCC has adopted a 28 GHz band segmentation plan, Teledesic supports prompt and immediate FCC action on the various pending applications for use of the 28 GHz band by local multipoint distribution service ("LMDS") and satellite applicants.
 - Until that time, the FCC must not take piecemeal action and assign spectrum in the 28 GHz band to individual services or applicants, such as non-geostationary orbit ("NGSO") feeder links or LMDS systems.
 - FCC action to unconditionally assign spectrum in the 28 GHz band to NGSO mobile satellite service ("MSS") feeder links prior to the issuance by final order of a decision in this proceeding will affect the options available to the FCC in this proceeding.
 - The FCC should not take any action to entrench any service in the 28 GHz band during the pendency of the rulemaking proceeding.
- o In the Third NPRM, the FCC correctly recognizes that co-frequency sharing between satellite systems and the LMDS is not feasible.
 - There has been no engineering study submitted in this proceeding that demonstrates that co-frequency sharing between satellite systems and LMDS systems is technically achievable.
 - The 28 GHz band plan proposed by the FCC moots the need for further consideration of the LMDS/fixed satellite service ("FSS") sharing issue. The proposed 28 GHz band segmentation plan redesignates 1000 MHz of spectrum for LMDS on a primary or co-primary basis, and provides even the most

aggressive LMDS proponents with precisely the spectrum they claim they need to operate a competitive LMDS system.

- o Under the Communications Act, the FCC must ensure that spectrum in the 28 GHz band is allocated in a manner to ensure the dissemination of radio communications to all of the people of the United States and the world.
 - While it is not at all clear that LMDS systems will be able to realize the reuse capabilities predicted by its promoters, the point is largely irrelevant.
 - No matter how many times a LMDS system may reuse spectrum, it is not an efficient and beneficial use because it provides duplicative services. LMDS promotes just another redundant broadcast television service, cream-skimming in areas of high subscriber density that already have, or will have, a number of service options.
 - Existing sources of competition to cable television services, such as video dialtone, direct broadcast satellite, multichannel multipoint distribution service, and satellite master antenna television service, provide services that are comparable or superior to LMDS
 - A global broadband NGSO satellite system, such as the system proposed by Teledesic, is a prime example of a technology that will help ensure the dissemination of communications services to all of the people of the United States and the world, including those that would get service in no other way.
- o Almost all satellite proponents support the balance for different satellite system types created by the proposed 28 GHz band segmentation plan, including the designation of 500 MHz of primary spectrum for NGSO satellite system service links.
 - Contrary to the self serving claims of GE American Communications, Inc., geostationary orbit ("GSO") satellite systems should not be provided with co-primary status in the 500 MHz of spectrum proposed to be designated on a primary basis for NGSO satellite service links.
 - Providing GSO satellite systems with a co-primary designation in the only 500 MHz of spectrum designated on a primary basis for use for NGSO satellite service links would destroy the delicate balance created by the proposed 28 GHz band segmentation plan.
 - If GSO satellite systems are deployed throughout these frequencies between now and the time Teledesic and other NGSO satellite systems are deployed, this approach would effectively relegate NGSO satellite systems to secondary

status throughout the 28 GHz band and prevent use of the band by NGSO satellite systems.

- To allow for the future development of both NGSO and GSO satellite system types, it is imperative that separate sets of sub-bands in which GSO and NGSO satellite systems each have primary status be established in the 28 GHz band.
- o The FCC's preliminary technical analyses correctly indicate that 500 MHz of spectrum is the minimum amount of spectrum that must be designated on a primary basis for service links for a NGSO satellite system in order to ensure the deployment of a viable NGSO satellite system.
 - Contrary to the contention of TRW Inc. ("TRW"), there is a rational basis to reject its proposal for only 400 MHz of primary spectrum for NGSO satellite service links because Teledesic alone has requested authority to use 500 MHz of spectrum in the 28 GHz band for its service links.
 - Since NGSO satellite systems are inherently global in nature, this minimum designation also will need to accommodate any non-U.S. origin global NGSO satellite system with service links in the Ka band.
 - As the Commission has correctly recognized, even for a NGSO satellite system proposing less than 500 MHz for its user terminals, a primary designation of 500 MHz is necessary for operational flexibility because secondary status will be unacceptable for gateway terminals that will perform certain critical operations, such as command and control functions.
- o The 19.300 - 19.425 GHz and 19.575 - 19.700 GHz bands should be designated as the downlink pairing for GSO systems operating at the 29.25 - 29.5 GHz bands.
 - The downlink pairing for GSO satellite systems operating in the 28.35 - 28.6 GHz or 29.25 - 29.50 GHz bands should not come at the expense of NGSO satellite systems.
 - Given the sharing difficulties between NGSO and GSO satellite systems, designation of any portion of the 17.7 - 18.55 GHz band for GSO satellite downlinks will not advance the public interest because it will reduce the paired spectrum available for NGSO satellite gateways and gigalink terminals operating in the 27.50 - 28.35 and 17.70 - 18.55 GHz bands.
- o Applying a financial requirement to global broadband NGSO satellite systems in the 28 GHz band whereby NGSO satellite system applicants would be able to demonstrate in their initial application their current financial ability to meet all the estimated costs

of construction, launch and first-year operation of their systems would be unrealistic and unduly discriminatory.

- Teledesic does not support adoption of the financial standard previously used for domestic GSO FSS applications.
- With the recent evolution in the satellite industry from GSO to NGSO satellite technology, the domestic and international regulatory structure governing satellite systems must change as well. Unlike domestic GSO satellites typically entailing only one satellite, NGSO satellite systems proposed in the 28 GHz band are global in scope and require the deployment of as many as several hundred satellites.
- Applications for global broadband NGSO satellite systems in the 28 GHz band need their own financial qualifications test that reflects the unique nature of these systems.
- The sheer magnitude of a broadband NGSO satellite system and its global nature make it unrealistic to require a commitment for the full financial requirement at an early stage.
- While some minimum upfront financing requirement is appropriate, the financial requirement should reflect the tiered and sequential nature of the financing process.
- The financial standard currently employed for domestic GSO FSS systems is flawed insofar as it provides a ready means for a single large company applicant, such as an equipment manufacturer or telecommunications service provider, to comply simply by relying on its own general financial wherewithal (i.e., availability of current assets as reflected on company balance sheet) even though the required internal capital has not been specifically committed to the project and indeed could not be so committed under any reasonable fiduciary standard.
- Under this standard, an applicant formed solely for the purpose of constructing, launching and operating a NGSO satellite system with a shareholder structure comprised of a number of large companies apparently would not be able to rely on the general financial wherewithal of its shareholders to meet its financial qualifications requirement even if any one of those shareholders individually would meet that requirement. Certainly, there is no logic to this result.
- If a single large company, like Motorola, applies for a NGSO satellite system and is permitted to meet its financial qualifications by reliance on a balance sheet of its corporate parent showing current assets or operating income (that is

not specifically earmarked for the project) sufficient to cover system construction and first year operating costs. then a company, like Teledesic, also should be able to rely on the balance sheets of its individual and corporate shareholders.

- Whatever rules the FCC adopts for global NGSO satellite systems must look to the financial wherewithal of the shareholders and financial backers without reference to the applicant's organizational form.
- o The Commission should not issue domestic licenses to applicants for global satellite systems in the Ka band that propose to operate internationally in a manner that is inconsistent with the 28 GHz band segmentation plan.
- If the FCC were to permit a licensee for a global satellite system to enter into international coordination and seek to operate internationally in frequency bands that conflict with the domestic 28 GHz band segmentation plan, it could effectively preclude the worldwide implementation of other global GSO and NGSO satellite systems authorized by the FCC.

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REPLY COMMENTS OF TELEDESIC CORPORATION

To: The Commission

I. INTRODUCTION

Teledesic Corporation ("Teledesic"), by its attorneys and pursuant to Section 1.415 of the Rules and Regulations of the Federal Communications Commission ("FCC" or "Commission"), 47 C.F.R. § 1.415, respectfully submits the following reply comments in response to the Commission's Third Notice of Proposed Rulemaking and Supplemental Tentative Decision in the above-captioned proceeding.^{1/} In the Third NPRM, the Commission proposes a band segmentation plan in the 27.5 - 30.0 GHz band ("the 28 GHz

^{1/} Rulemaking to Amend Parts 1, 21 and 25 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, to Reallocate the 27.5 - 30.0 GHz Band, to Establish Rules and Policies for Local Multipoint Distribution Services and the Fixed Satellite Service, FCC 95-287 CC Docket No. 92-297 (released July 28, 1995) ("Third NPRM").

band") to accommodate local multipoint distribution service ("LMDS") systems, geostationary orbit ("GSO") satellite systems operating in the fixed satellite service ("FSS"), non-geostationary orbit ("NGSO") satellite systems operating mobile satellite service ("MSS") feeder links in the FSS, and NGSO satellite systems operating in the FSS. See Third NPRM, at para. 44, et. seq. As Teledesic and other parties demonstrated in their comments, the FCC's proposed 28 GHz band segmentation plan is a reasonable accommodation of the competing interests and the FCC should proceed immediately to adopt its proposed plan. See e.g., NASA Comments; Motorola Satellite Communications, Inc. and Iridium, Inc. Comments ("Motorola Comments"); CellularVision of New York, L.P. Comments ("CellularVision Comments"); and Loral Aerospace Holdings, Inc. Comments ("Loral Aerospace Comments").

II. DISCUSSION

A. The FCC Must Not Adopt NGSO Feeder Link Allocations On An Interim Basis Prior To Adopting The 28 GHz Band Segmentation Plan

Teledesic continues to support prompt and immediate action by the FCC to adopt the 28 GHz band segmentation plan. It is imperative that the band plan be adopted by the FCC now to allow all affected parties to proceed without delay with their respective business plans. Once the FCC has adopted a 28 GHz band segmentation plan, Teledesic supports expeditious FCC action on the various pending applications for use of the 28 GHz band by LMDS and satellite applicants. However, until that time, the FCC must not take piecemeal action and assign spectrum in the 28 GHz band to individual services or applicants, such as for NGSO feeder links. Thus, Teledesic opposes the recent *ex parte* presentations made by Loral/QUALCOMM Partnership, L.P. ("Qualcomm") in another proceeding insofar as

Qualcomm urges a different approach. See Letter to William F. Caton, Acting Secretary, FCC, from William D. Wallace, CC Docket No. 92-166 (Sept. 14, 1995).^{2/} Similarly, Teledesic also takes issue with the request of TRW Inc ("TRW") that the FCC consider independently of any other proposed satellite use of the 28 GHz band its application for modification of its license filed on September 29, 1995 requesting the assignment of 300 MHz of feeder link spectrum at 29.2 - 29.5 GHz and 300 MHz at 19.4 - 19.7 GHz. See Letter to William F. Caton, Acting Secretary, FCC, from Norman P. Leventhal (Sept. 29, 1995). FCC action to unconditionally assign spectrum in the 28 GHz band to NGSO MSS feeder links prior to the issuance by final order of a decision in this proceeding will affect the options available to the FCC in this proceeding. The FCC should not take any action to entrench any service in the 28 GHz band during the pendency of the rulemaking proceeding. Applications of CellularVision of New York, L.P., 1-CF-P-95 through 33-CF-P-95 and 1-CF-P-94. If the Commission acts piecemeal on the requests of Loral, TRW or CellularVision of New York, L.P. ("CVNY") prior to action in the above-captioned proceeding, there would be few options left for consideration in this proceeding. Therefore, in order to avoid prejudicing the outcome of the proceeding by designating spectrum in the 28 GHz band in a piecemeal fashion, the FCC must not designate any spectrum for NGSO MSS feeder links or authorize CVNY to expand its LMDS system until a 28 GHz band plan has been adopted and the status of all services in the 28 GHz band has been resolved by final Commission action.

^{2/} Since this ex parte presentation was made in CC Docket No. 92-166, for purposes of a complete and accurate record Teledesic will file a copy of its reply comments in that proceeding as well.

B. Co-Frequency Sharing Between The FSS And The LMDS Is Not Technically Feasible

In the Third NPRM, the FCC correctly recognizes that co-frequency sharing between satellite systems and LMDS is not feasible. See Third NPRM, at para. 39 et. seq. In its comments, while not supplying any additional technical support on the co-frequency sharing issue, Bell Atlantic Corporation ("Bell Atlantic") disputes this conclusion. Bell Atlantic Comments at 3.

There has been no engineering study submitted in this proceeding that demonstrates that co-frequency sharing between satellite systems and LMDS systems is technically achievable. The Negotiated Rulemaking Committee established by the FCC to attempt to develop a sharing plan that would accommodate LMDS systems and satellite systems in the 28 GHz band concluded that it was not feasible for LMDS stations and ubiquitous FSS user terminals proposed by NGSO and GSO satellite systems to share the same frequencies. See Report of the LMDS/FSS 28 GHz Band Negotiated Rulemaking Committee, at 85 (Sept. 23, 1994). Additional technical studies have confirmed that co-frequency sharing between LMDS systems and satellite systems in the 28 GHz band is not feasible. See e.g., LinCom Corporation, Evaluation of Bellcore's Interference Analyses for Co-Frequency Sharing of the 28 GHz Band by the Local Multipoint Distribution Service (LMDS) and the Fixed Satellite Service (FSS), (June 9, 1995); LinCom Corporation, Review of GeoWave Proposal for the Co-Frequency Sharing of the 28 GHz Band by the Local Multipoint Distribution Service (LMDS) and the Fixed Satellite Service (FSS), (June 28, 1995); MITRE Corporation, Critique of the Bellcore Report, (June 9, 1995). Almost all parties that addressed this issue in the latest round of comments, including various LMDS advocates, agree that co-frequency sharing between satellite and LMDS is not technically feasible. See Comtech Comments at 2 - 3;

GHz Equipment Comments at 3 - 4. To reopen this already settled issue would be a waste of valuable Commission and industry resources. Therefore, Teledesic urges the FCC to move forward immediately to take final action on and adopt the proposed 28 GHz band segmentation plan.

In any event, the 28 GHz band plan proposed by the FCC moots the need for further consideration of the LMDS/FSS sharing issue. Since 1991, the most aggressive of the LMDS advocates have claimed that they need access to as much as 1000 MHz of spectrum in the 28 GHz band to establish an analog video distribution system.^{3/} See Third NPRM, at paras. 29-32; Rulemaking to Amend Part 1 and 21 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band and to Establish Rules and Policies for Local Multipoint Distribution Service, 8 FCC Rcd 557, at paras. 8-9 (1993). The proposed 28 GHz band segmentation plan redesignates 1000 MHz of spectrum for LMDS on a primary or co-primary basis, and provides LMDS proponents with precisely the spectrum they claim they need to operate a competitive LMDS system. Thus, there is no reason to further delay and unduly complicate this proceeding to reexamine the co-frequency sharing issue when the proposed 28 GHz band segmentation plan includes the designation on a primary or co-primary basis of enough spectrum to satisfy the needs of even the most demanding of the LMDS proponents.

C. Satellite Systems Will Make A More Efficient And Beneficial Use Of The 28 GHz Band Than The Proposed LMDS

Under the Communications Act of 1934, as amended, the FCC is charged with regulating communication by radio "to make available, as far as possible, to all the people of

^{3/} GHz Equipment Co., Inc., an equipment manufacturer, systems integrator and LMDS proponent, filed an ex parte presentation stating that "... a minimum of 750 MHz per licensee is essential to fulfill the promise of the varied millimeter wave applications we see flowing from new LMDS services, including competition to traditional cable with fiber (whose channel capacity is comparable to that of a 750 MHz LMDS system.)" Ex Parte Presentation of GHz Equipment Co., Inc., ET Docket No. 94-124 (filed June 8, 1995).

the United States a rapid, efficient, Nation-wide and world-wide . . . radio communication service..." 47 U.S.C. § 151. Accordingly, the FCC must ensure that the radio spectrum, including the 28 GHz band, is allocated in a manner to ensure the dissemination of radio communications to all of the people of the United States and the world. The claim of CVNY that LMDS is spectrally more efficient than the satellite systems proposed by Teledesic and Hughes Communications Galaxy, Inc. ("Hughes") is of little significance in addressing the most relevant issue in designating the 28 GHz band for various communications services. CellularVision Comments at 31.

While it is not at all clear that LMDS systems will be able to realize the reuse capabilities predicted by its proponents, the point is largely irrelevant. No matter how many times a communications system reuses spectrum, it is not an efficient and beneficial use if the system provides duplicative services. Despite its claimed reuse potential, LMDS promotes just another redundant broadcast television service, cream-skimming in areas of high subscriber density that already have, or will have, a number of service options. Other sources of competition to cable television services, such as video dialtone, direct broadcast satellite, multichannel multipoint distribution service, and satellite master antenna television service, provide services that are comparable or superior to LMDS. Unlike LMDS, many of these actual competitors to cable offer economical service to more than just the densely-populated urban areas that are the focus of CVNY's LMDS service.

Unlike a redundant, urban service such as LMDS, a global broadband NGSO satellite system, such as the system proposed by Teledesic, is a prime example of a technology that will help ensure the dissemination of communications services to all of the people of the United States and the world. NGSO satellite systems are by their nature inherently global in their coverage and scope and, unlike LMDS, will provide service to all areas of the world,

including those that would get service in no other way. NGSO satellite systems will create instant communications infrastructures where low user density, rugged terrain or other factors make other communications alternatives impractical. Clearly, the most efficient and beneficial use of the 28 GHz band is for global satellite systems.

D. GSO Satellite Systems Should Not Be Provided With Co-Primary Status In Bands Designated On A Primary Basis For NGSO Satellite Systems

Almost all satellite proponents support the balance for different satellite system types created by the proposed 28 GHz band segmentation plan. GE American Communications, Inc. ("GE American"), however, an applicant for a GSO satellite system in the 28 GHz band argues that the FCC must give GSO satellite systems co-primary status in the 500 MHz of spectrum proposed to be designated for NGSO satellite service links. GE American claims such treatment is necessary in order to create incentives for NGSO satellite system operators to resolve interference problems between GSO and NGSO satellite systems. GE American Comments, at ii, 4, 8 - 10, 15 - 17.^{4/} GE American's self-serving proposal is an attempt to secure access to an additional 500 MHz of primary spectrum over and above the 1000 MHz of primary spectrum already proposed for GSO satellite use.^{5/} Providing GSO satellite systems with a co-primary designation in the only 500 MHz of spectrum designated on a

^{4/} Furthermore, GE American alleges that unless GSO satellite systems are provided with co-primary status in the 28.6 - 29.1 GHz band, GSO satellite systems will be precluded from using this spectrum. GE American Comments at 16. Contrary to GE American's contention, it is likely that GSO satellite systems will be able to operate site-specific Earth stations on a secondary basis in this 500 MHz of spectrum. Third NPRM, at para. 56.

^{5/} The logic of GE American's proposal would require the redesignation on a co-primary basis to both GSO and NGSO satellite systems of the 1000 MHz of primary spectrum presently proposed to be designated on a primary basis to GSO satellite systems. Such a redesignation would be inconsistent with the underlying technical rationale for the proposed 28 GHz band segmentation plan. Separate designations of primary spectrum for both GSO and NGSO satellite system types are proposed and are necessary because of sharing difficulties between GSO and NGSO satellite systems. See Third NPRM, at para. 16. The logic of GE American's proposal also would require the FCC to extend the co-primary designation for NGSO satellite systems throughout the FSS bands, including the C and Ku bands.

primary basis for use for NGSO satellite service links would destroy the delicate balance created by the proposed 28 GHz band segmentation plan. Moreover, if GSO satellite systems are deployed throughout these frequencies between now and the time Teledesic and other NGSO satellite systems are deployed, this approach would effectively relegate NGSO satellite systems to secondary status throughout the 28 GHz band and prevent use of the band by NGSO satellite systems. To allow for the future development of both NGSO and GSO satellite system types, it is imperative that separate sets of sub-bands in which GSO and NGSO satellite systems each have primary status be established in the 28 GHz band.

E. The Proposed Designation Of 500 MHz Of Spectrum On A Primary Basis For NGSO Service Links In The 28 GHz Band Plan Is The Minimum Amount Of Spectrum Required

In the Third NPRM, the FCC proposes to designate 500 MHz of spectrum at the 28.6 - 29.1 GHz band on a primary basis to NGSO FSS use. Third NPRM, at para. 56. As the FCC's preliminary technical analyses correctly indicate, 500 MHz of spectrum is the minimum amount of spectrum that must be designated on a primary basis for service links for a NGSO satellite system in order to ensure the deployment of a viable NGSO satellite system. Despite this conclusion, TRW Inc. ("TRW") argues that the FCC has no rational basis for rejecting its May 18, 1995 proposed band segmentation plan providing only 400 MHz of spectrum for NGSO satellite service links. TRW Comments at 14 and 36. A review of the facts confirms that neither the record nor logic supports less than a 500 MHz allocation for NGSO satellite systems.

Contrary to TRW's assertions, Teledesic has requested authority to use 500 MHz of spectrum in the 28 GHz band for its service links. See Amended Application of Teledesic Corporation for a Low Earth Orbit Satellite System in the Fixed Satellite Service. Since NGSO satellite systems are inherently global in nature, this minimum designation also will

need to accommodate any non-U.S. origin global NGSO satellite system with service links in the Ka band. As the Commission has correctly recognized, even for a NGSO satellite system proposing less than 500 MHz for its user terminals, a primary designation of 500 MHz is necessary for flexibility. While the Commission is proposing to designate some additional 28 GHz spectrum on a secondary basis for NGSO satellite systems to accommodate gateway terminals for such systems, relegating all gateway terminals of a NGSO satellite system to secondary status will result in operational uncertainty. With secondary status, gateway terminals of a NGSO satellite system will be required to accept interference from GSO satellite system operations in the band and to cease operation if they cause unacceptable interference to a GSO satellite system. Secondary status will be unacceptable for those gateway terminals needed to perform certain critical operations, such as command and control functions, and some primary spectrum will be required for such operations. The 500 MHz of spectrum the FCC proposes to designate on a primary basis for NGSO service links is at best the minimum amount of spectrum required to accommodate global NGSO satellite systems.

F. The 19.300 - 19.425 GHz And 19.575 - 19.700 GHz Bands Should Be Designated As The Downlink Pairing For GSO Systems Operating At The 29.25 - 29.50 GHz Band

In the Third NPRM, the Commission solicits comments on whether to designate and pair the 18.30 - 18.55 GHz downlink band with the 29.25 - 29.50 GHz uplink band for GSO satellite uses or to pair such GSO satellite uplinks with downlinks at the 19.300 - 19.425 and 19.575 - 19.700 GHz bands. Third NPRM, at para. 65. Motorola and Hughes argue in favor of designation of the 17.7 - 18.55 GHz band as the downlink pairing for GSO satellite systems operating at both the 28.35 - 28.6 GHz and 29.25 - 29.5 GHz bands. Motorola Comments at 16 - 17; Hughes Comments at 22. They allege that these designations would permit greater flexibility for their satellite systems in international coordination efforts. Id.

The downlink pairing for GSO satellite systems operating in both the 28.35 - 28.6 GHz and 29.25 - 29.5 GHz bands should not come at the expense of NGSO satellite systems. Thus, the paired 27.50 - 28.35 GHz and 17.70 - 18.55 GHz bands is a logical place for the operation of Teledesic's gigalink terminals and the gateway terminals of other NGSO satellite systems. Given the sharing difficulties between NGSO and GSO satellite systems, designation of any portion of the 17.70 - 18.55 GHz band for GSO satellite downlinks will not advance the public interest because it will reduce the paired spectrum available for NGSO satellite gateways and gigalink terminals in the 27.50 - 28.35 and 17.70 - 18.55 GHz bands. Teledesic, therefore, supports the designation of the 19.300 - 19.425 and 19.575 - 19.700 GHz downlink bands for pairing with GSO satellite uses at the 29.25 - 29.50 GHz uplink band. Such action will preserve the availability of the 27.50 - 28.35 GHz band on a secondary basis for gigalink terminals and gateways for NGSO satellite systems like Teledesic. Third NPRM, at para. 65.

G. The FCC Should Adopt Financial Qualification Requirements Specific To NGSO Systems And Neutral As To Organizational Form

Motorola proposes a financial requirement whereby Ka band NGSO satellite system applicants would be able to demonstrate in their initial application their current financial ability to meet all the estimated costs of construction, launch and first-year operation of their systems. Applying such a requirement to global broadband NGSO satellite systems in the 28 GHz band would be unrealistic and unduly discriminatory. Motorola Comments at 22 and 24.

Teledesic does not support the application to global NGSO satellite systems of the financial standard that the FCC has previously used for domestic GSO FSS applications. The financial standard advanced by Motorola was adopted many years ago for use for domestic-only GSO satellite systems typically entailing only one satellite. The satellite industry has

evolved and changed significantly since this standard was adopted. Any financial standard adopted for NGSO FSS systems must reflect these changes.

For more than three decades, GSO satellites have been virtually the exclusive means of providing space-based communications. In recent years, a number of major NGSO satellite systems have been proposed to meet a range of service needs. With the recent evolution from GSO to NGSO satellite technology, the domestic and international regulatory structure applicable to the deployment of satellite systems must change as well. The financial standard advocated by Motorola does not reflect the process that will be employed by companies like Teledesic and others to finance their global broadband NGSO satellite systems that will be deployed in the 28 GHz band. Indeed, it does not reflect the process that Motorola is using for its own NGSO satellite system, Iridium. Unlike the domestic GSO satellites for which the financial standard advocated by Motorola was adopted, the NGSO satellite systems proposed in the 28 GHz band are global in scope and require the deployment of as many as several hundred satellites. Internal and external commitments for all of the capital and debt necessary to finance the construction and first year operation of these NGSO satellite systems will not

be secured in advance but will be obtained in stages.^{6/} The financial requirement adopted by the FCC for NGSO FSS systems must reflect this economic reality.

Applications for global broadband NGSO satellite systems in the 28 GHz band need their own financial qualifications test that reflects the unique nature of these systems. The sheer magnitude of a broadband NGSO satellite system and its global nature make it unrealistic to require a commitment for the full financial requirement at an early stage. While some minimum upfront financing requirement is appropriate, the financial requirement should reflect the tiered and sequential nature of the financing process.

The financial standard proposed by Motorola for NGSO satellite systems is flawed in another respect. In its present form, the financial requirement provides a ready means for a single large company applicant, such as an equipment manufacturer or telecommunications service provider, to comply simply by relying on its own general financial wherewithal (i.e., availability of current assets as reflected on company balance sheet) even though the required internal capital has not been specifically committed to the project and indeed could not be so committed under any reasonable fiduciary standard. On the other hand, under this standard,

^{6/} Motorola is obtaining the financing for its Iridium system in a tiered and sequential nature from outside sources and joint venture partners, and is not relying solely or even primarily on internal capital. In a recent registration statement filed with the Securities and Exchange Commission, Motorola stated that it had anticipated total capital requirements of \$4.7 billion through the end of 1999. Iridium Outlines Challenges Facing Big LEOs In SEC Filing, Communications Daily, at 4 (July 24, 1995). The company said it had received \$1.03 billion in equity investments from Iridium partners and had additional commitments of \$572 million for a total of \$1.6 billion to date, excluding \$250 million in reserve capital call. Id. Motorola has stated that the rest of the required \$3.1 billion is to be raised subsequently through debt offerings. Id.; see also Iridium Pulls \$300-Million Bond Offering, Cites Unfavorable Terms, Communications Daily, at 5 (Sept. 22, 1995). Motorola itself is only a 20.1% investor in the system and, as such, will not supply all of the capital required to finance, construct and operate the Iridium system. The investors in the other 79.9% of Iridium, who have provided some of the \$1.03 billion in equity raised in one of the early financing rounds include: Nippon Iridium Corp., Vebacom GmbH, Iridium SudAmerica Corp., Iridium Middle East Corp., China Great Wall Industry Corp., Iridium Canada, Inc., Krunichev State Research and Production Space Center, Pacific Electric Wire & Cable Co., Ltd., Thai Satellite Telecommunications Co. Ltd., Iridium India Private Telecom Ltd., Societa Finanziaria Telefonica per Azioni; Iridium Africa Corp., Lockheed Martin Corp., and Raytheon Co. Iridium Files \$300M Debt Offering With SEC, Satellite News (July 24, 1995).

an applicant formed solely for the purpose of constructing, launching and operating a NGSO satellite system with a shareholder structure comprised of a number of large companies apparently would not be able to rely on the general financial wherewithal of its shareholders to meet its financial qualifications requirement even if any one of those shareholders individually would meet that requirement. Certainly there is no logic to this result. Under the financial requirement proposed by Motorola, the organizational form of the applicant alone dictates the applicant's ability to comply with the financial qualifications requirement.

If a single large company, like Motorola, applies for a NGSO satellite system and is permitted to meet its financial qualifications by reliance on a balance sheet of its corporate parent showing current assets or operating income (that is not specifically earmarked for the project) sufficient to cover system construction and first year operating costs, then a company like Teledesic also should be able to rely on the balance sheets of its individual and corporate shareholders. Whatever rules the FCC adopts for global NGSO satellite systems must look to the financial wherewithal of the shareholders and financial backers without reference to the applicant's organizational form.

H. The FCC Must Not Issue Domestic Licenses To Applicants For Global Satellite Systems That Propose To Operate Internationally In Frequency Bands That Are In Conflict With The Spectrum Designations In The Domestic 28 GHz Band Segmentation Plan

Contrary to the assertions of Hughes, the Commission should not issue domestic licenses to applicants for global satellite systems in the Ka band that propose to operate internationally in a manner that is inconsistent with the 28 GHz band segmentation plan.^{7/}

See Hughes Comments at 27. If the FCC were to permit a licensee for a global satellite

^{7/} Such action would not infringe on the sovereignty of other nations since the Commission would only be limiting the spectrum the United States licensee could seek to operate in, not whether and how it should be licensed by a foreign regulatory body.

system to enter into international coordination and seek to operate internationally in frequency bands that conflict with the domestic 28 GHz band segmentation plan, it could effectively preclude the worldwide implementation of other global GSO and NGSO satellite systems authorized by the FCC. For example, to the extent that a NGSO satellite system has its service area curtailed by the co-frequency operation of a GSO satellite system, the economic feasibility of the global NGSO satellite system will be adversely affected. Therefore, to the extent that a satellite system is able to operate internationally in frequency bands that are inconsistent with the 28 GHz band segmentation plan, competition in the provision of global satellite service ultimately may be curtailed. Hence, the FCC must issue domestic licenses to applicants for global satellite systems in the Ka band that only authorize uses outside the United States that are consistent with the 28 GHz band segmentation plan. To allow satellite systems operating in the Ka band to seek to operate in spectrum that is in conflict with the 28 GHz band segmentation plan would undercut the band segmentation scheme adopted by the FCC and would be contrary to the public interest. See 47 U.S.C. § 307(a).

III. CONCLUSION

Based on the foregoing, Teledesic urges the FCC to proceed immediately to adopt its proposed domestic 28 GHz band segmentation plan

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Dayle L. Jones, an employee of Akin, Gump, Strauss, Hauer & Feld, L.L.P., certify that copies of the foregoing **REPLY COMMENTS OF TELEDESIC CORPORATION** were sent via First Class U.S. Mail postage prepaid or via Hand Delivery on this 10th day of October, 1995, to the following parties:

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